

## Remarks

The following remarks are directed toward amendments to the specification.

In the specification, the titled of the patent application has been changed in light of the amended claims.

In the specification, the cross-reference to related applications has been deleted.

In the specification, five corrections of typographical errors have been presented.

The following remarks are provided in further support of the Claims.

Present Status of the Claims: Claims 1-9 are pending.

Objections: Claim 5 is objected to because of a typographical error of "G1 phases" rather than "G1 phase". Claim 5 has been cancelled.

### Rejections:

#### Rejection Under 35 U.S.C. §112

Claims 1-9 are rejected under 35 U.S. C. §112 second paragraph as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Claims 1-9 are rejected under 35 U.S. C. §112 first paragraph because the specification does not reasonably provide enablement for a person skilled in the art to make and use the invention commensurate with in scope with these claims.

Claims 1-9 are rejected under 35 U.S. C. §112 first paragraph as failing to comply with the written description requirement.

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I. DISCUSSION - 35 U.S.C. §112

The Office rejected claims 1-9 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claims 1,4,5,7, and 8:** The Office asserts that **claims 1,4,5,7, and 8** are vague and indefinite through their use of the word "using," which is not a description of a specific action and which, therefore, means the steps in these claims employing "using" are not active method steps. The phrase, "using the wavelength shift of the laser wavelength of the laser," in **claim 1** has been replaced by the phrase, "by comparing the wavelength shift of the laser wavelength of the laser biocavity to a wavelength shift generated by a G2 phase cell of the same type as the cell in the fluid to determine whether the cell is in a G2 phase," which describes an active method step. **Claims 4, 5, 7, and 8** have been cancelled.

**Claim 6:** The Office asserts that claim 6 is vague and indefinite in the recitation of "determining by means of the wavelength shift a biomolecular concentration of the cell", because "by means of" is not an active method step because it is not a description of a specific action. **Claim 6** has been cancelled.

**Claim 7:** The Office asserts that it is unclear how determining the ratio of a percentage of cells in the G2 phase versus a percentage of cells in G2 phase in a non-cancerous cell population further limits the method objective of claim 6. **Claim 7** has been cancelled.

**Claim 8:** The Office asserts that claim 8 is vague and indefinite in the recitation of "increased growth rate" without reference to the growth rate it is relative to and that claim 8 recites a "first wavelength distribution" that lacks antecedent basis within the claim. **Claim 8** has been cancelled.

**Claim 9:** The Office asserts that claim 9 recites a "second wavelength distribution" which lacks antecedent basis within claim 9 and claim 8. **Claim 9** has been cancelled.

**Claims 6 and 7:** The Office asserts that the metes and bounds of "biomolecular" concentration as recited in claims 6 and 7 cannot be determined. **Claims 6 and 7** have been cancelled.

Claims 1-9 are rejected under 35 U.S. C. §112 first paragraph because the specification does not reasonably provide enablement for a person skilled in the art to make and use the invention commensurate with in scope with these claims.

The Office asserts that the specification, while being enabling for a method of determining the percentage of G2 cells in a homogeneous population of cells using a laser biocavity comprising a semiconductor material, does not reasonably provide enablement for a method of discerning between cells of the same type which are in the G0, G1, S, or M phase, a method of determining the G2 phase of cells in a heterogeneous population of cells, a method of determining the biomolecular concentration within a cell, or a method of detecting cancer from a sample of cells taken from an individual. **Claims 1 and 2** have been amended to apply to determining the percentage of G2 cells in a homogeneous population of cells, for which the Office

recognizes the specification as enabling. **Claims 4-9**, which are directed to the methods which the Office asserts are not enabled by the specification, are cancelled.

The Office asserts that it is necessary to include the limitation of the laser biocavity comprising a semiconductor because the specification teaches on page 3, lines 22-24 that "the semiconductor laser is the enabling component of this microanalysis system because of its ability to emit coherent, intense light from a small aperture compatible with the dimensions of a human cell." **Claim 1** has been amended to include this limitation.

**Claims 1-9** are rejected under 35 U.S. C. §112 first paragraph as failing to comply with the written description requirement.

The Office asserts that the instant claims are reliant upon a genus of biocavity lasers. The Office further asserts that the specification teaches that the semiconductor laser is the enabling component of the microanalysis system and that the description of a semiconductor biocavity laser does not describe a genus of biocavity lasers because gas, organic dyes, and solid state gain materials would not be expected to have functional attributes of the gain material required in the instant method.

In response to the Examiner's comment, **Claim 1** has been amended to include the limitation of a laser biocavity including a semiconductor laser. **Claims 4-9** have been cancelled.

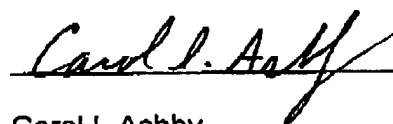
The Office asserts that **Claim 5** is drawn to new matter. **Claim 5** has been cancelled.

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### Conclusion

Applicants have responded to each and every objection and rejection, and urge that Claims 1-3 as presented are now in condition for allowance. Applicants request expeditious processing to issuance.

Respectfully submitted,



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